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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/449,773	11/26/1999	SRIDHAR ADIBHATLA	13DV13092	6688

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EXAMINER

FREJD, RUSSELL WARREN

ART UNIT	PAPER NUMBER
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2128

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/449,773

Applicant(s)

ADIBHATLA ET AL.

Examiner

Russell Frejd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 12 is/are rejected.
- 7) ☒ Claim(s) 3-11 and 13-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

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Examination of Application #09/449,773

1. Claims 1-18 of application 09/449,773, filed on 26-November-1999, are presented for examination.

Claim Rejections under 35 U.S.C. § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by the article authored by Yu et al., hereinafter Yu, entitled *A Floating Point Co-Processor for Real-Time Fault Detection and Isolation in Electronically Controlled IC Engines*.

3.1 Yu discloses an architecture for a floating-point state estimator, designed specifically to interact as a co-processor with an onboard Fault Detection and Isolation (FDI) controller, wherein the processor considers the structure of model-based failure detection algorithms and the need for simulating the dynamics of vehicle subsystems in order to monitor their performance, and processes the information by the onboard FDI controller to diagnose sensor or actuator malfunctions [p.53, col. 1 last para. through col 2, 1st para.].

In regard to claims 1 and 12, Yu teaches [p. 53, col. 1, 2nd para.] FDI methodologies which utilize analytic redundancy within a dynamic system to detect and isolate faults, the

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dynamic system including vehicle engine (applicant's engine model);

a fault detection filter which utilizes a model of the dynamic system, including integrated onboard engine controllers and vehicle subsystems, to generate an estimate of the system outputs, given the inputs (applicant's component quality estimator coupled to the engine model);

and estimating outputs which are then compared to the measured sensor outputs, wherein the difference between the two is analyzed by means of fault isolation logic aimed at identifying the source of the error (applicant's fault detection and isolation classifier).

In regard to claim 2, Yu discloses simulating the dynamics of a vehicle subsystem [p. 53, col. 1, last para.].

Allowed Claim

4. Claim 18 is deemed allowable over the prior art of record at this time.

Claim Objections

5. The remaining claims 3-11 and 13-17 are objected to for incorporating the rejection of their respective base claims by dependency.

Response Guidelines

6. A shortened statutory period for response to this action is set to expire **3 (three) months and 0 (zero) days** from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see MPEP 710.02, 710.02(b)).

7. **Any response to the Examiner in regard to this non-final action should be**

directed to: Russell Frejd, telephone number (703) 305-4839, Monday-Friday from 0630 to 1500 ET, **or** the examiner's supervisor, Kevin Teska,

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telephone number (703) 305-9704. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, telephone number (703) 305-3900.

mailed to: Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to: (703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Date: 13-March-2004

A handwritten signature in cursive script that reads "RUSSELL FREJD". The signature is written in dark ink and is positioned above a horizontal line.

**RUSSELL FREJD
PRIMARY EXAMINER**